

WHAT IS CLAIMED IS:

1. A fuel cell power system comprising:

a fuel cell;

a first hydrogen storage vessel having a first hydrogen absorbing material (MH1) that can store and release hydrogen;

a catalytic combustor that heats the first hydrogen storage vessel so as to release hydrogen in order to supply hydrogen to the fuel cell; and

a second hydrogen storage vessel having a second hydrogen absorbing material (MH2) that can store and release hydrogen and has a hydrogen release temperature that is lower than that of the first hydrogen absorbing material (MH1), the second hydrogen storage vessel releasing hydrogen as a fuel for the catalytic combustor under heating by waste heat from the fuel cell.

2. The fuel cell power system according to Claim 1 wherein, the system is configured such that, when the fuel cell is starting operation, the first hydrogen storage vessel supplies hydrogen to the second hydrogen storage vessel, and the fuel cell is preheated by heat generated as the second hydrogen absorbing material (MH2) stores hydrogen.

3. The fuel cell power system according to Claim 1, wherein the first hydrogen absorbing material (MH1) is an Mg system hydrogen storage alloy.

4. The fuel cell power system according to Claim 2, wherein the first hydrogen absorbing material (MH1) is an Mg system hydrogen storage alloy.

5. A fuel cell power apparatus comprising:

a fuel cell;

a first means for storing hydrogen, said first means having a first hydrogen absorbing material (MH1) that can store and release hydrogen;

a catalytic combustor that heats the first hydrogen storage vessel so as to release hydrogen in order to supply hydrogen to the fuel cell; and

a second means for storing hydrogen, said second means having a second hydrogen absorbing material (MH2) that can store and release hydrogen and has a hydrogen release temperature that is lower than that of the first hydrogen absorbing material (MH1), the second means for storing hydrogen releasing hydrogen as a fuel for the catalytic combustor under heating by waste heat from the fuel cell.

6. The fuel cell power apparatus according to Claim 5, the apparatus is configured such that, when the fuel cell is starting operation, the first means for storing hydrogen supplies hydrogen to the second means for storing hydrogen, and the fuel cell is preheated by heat generated as the second hydrogen absorbing material (MH2) stores hydrogen.

7. The fuel cell power apparatus according to Claim 5, wherein the first hydrogen absorbing material (MH1) is an Mg system hydrogen storage alloy.

8. The fuel cell power apparatus according to Claim 6, wherein the first hydrogen absorbing material (MH1) is an Mg system hydrogen storage alloy.